Reference List

DATA CENTERS

GEOCLIMA
Smart HVAC Solutions

IMPROVING EFFICIENCY IN DATA CENTERS

Data Centers use a lot of power to cool their servers and support equipment and owner/operators are constantly looking at ways to reduce power and improve reliability.

Chillers are used extensively on data centres and there are usually one or more backup chillers to minimise the risk of the data centre shutting down due to overheating.

Our units are the ideal solution because they are reliable and efficient and do not require as much maintenance.

Because data centres have a steady heat load 365 days per year, energy and carbon savings achievable using our chillers are dramatic!

In many cases, 50% energy savings can be easily achieved when Geoclima chillers are installed.

UNITS

Place	Model	kW	Description	N.
Data center, Ministry of Defence, Moscow, Russia	TFC – T 420/34/TP	720	Air cooled chiller with oil-free centrifugal compressors and free cooling	1
Data center AI-TECO, Moscow, Russia	TMA 550/34/FC/PU	1650	Air cooled chiller with oil-free centrifugal compressors and free cooling and pump	3
Data center DataDom, Ostapovsky proezd, Moscow	TMA 2A600A AC PU/134	600	Air cooled chiller with oil-free centrifugal compressors and pump	1
Data center Sberbank, Perm', Siberia	TMA 340/34/FC	1020	Air cooled chiller with oil-free centrifugal compressors and free cooling	3
Colt Data center, London	TMA 2A 600A EC	3300	Air cooled chiller with oil-free centrifugal compressors	6
Data center, London	TMA 850/34/LPA	1800	Air cooled chiller with oil-free centrifugal compressors and LPA system	4
Data center for Barkley, London	TMA 1400/34/LPA	16800	Air cooled chiller with oil-free centrifugal compressors and LPA system	12
Mega Data center Sberbank, Moscow	TSA 1A275B EC	7425	Condensing unit with air condensation and oil-free centrifugal compressor	27
	TSA 1B340B EC	9180		27
Mega Data center Sberbank, Moscow	TSA 1B340B EC SP	680	Condensing unit with air condensation and oil-free centrifugal compressor	2
Lloyds of London Data center, Sittinbourne	TMA 4A1000 EC 34	1000	Air cooled chiller with oil-free centrifugal compressors	1
Vodafone Data Center	TMA 1B400B EC K	1275	Air cooled chiller with oil-free centrifugal compressors	3

Place	Model	kW	Description	N.
Commonwealth Bank of Australia, Melbourne	TMA 2A660A LLN ES EC FC-34	5026	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	7
Norwest Data Centre	TMA 2B850B ES EC FC-34 K TP	7560	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	6
Great Sutton Street London	VHH C 138/01/SP	Cooling 387 Heating 384	Water cooled chiller with scroll compressors	3
Kings Cross Bldg E1	TMA 1A 320A EC-34LN-SP	320	Air cooled chiller with oil-free centrifugal compressor	1
Nottingham University	VHR F 2V15ZE	60	Air cooled chiller with reciprocating compressors and radial fans	1
St James Market	TMA 2A550A EC	1150	Air cooled chillers with oil-free centrfigual compressors	2
	TMA 2B700B EC	2100		3
Global Connect, Denmark	TMA 1W260A EC-ZE	1205	Air cooled chillers with oil-free centrifugal compressors	5
	TMA 1W200A EC-ZE PU	400	Air cooled chillers with oil-free centrifugal compressors	2
Australia	TMA 2B1000B ES EC-34 K	3600	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	3
	TMA 3B1150A ES EC-34 K	14400		12
	TMA 2B850B ES EC FC-34 K TP	3600		3
	TMA 2B850B ES EC FC-34 K TP	3600		3
Australia	TMA 3B1150A ES EC-34 K	3600	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	3
Germany	TMH 2B800 DC-13	1200	Water cooled chiller with oil-free centrifugal compressors	1
USA	TMA 2A450A EC FC-34 K	450	Air cooled chillers with oil-free centrifugal compressors	1
Spain	TMA 2Z500B EC FC-ZE	1000	Air cooled chillers with oil-free centrifugal compressors	2
Italy	VHR-2084-FC-EC-BP-10-SP	440	Air cooled chillers with scroll compressors and radial fans	2

Place	Model	kW	Description	N.
Confidential	TMA 2B700A LLN EC-34 CM PU	4175	Air cooled Circlemiser chiller with oil-free centrifugal compressors	5
Hong Kong	VHA 2117A EC-01 CM	216	Air cooled Circlemod chiller with scroll compressors	2
TRF - UK	TMA 3B1080A LN EC-34	3150	Air cooled chillers with oil-free centrifugal compressors	3
Australia	TMA 3B1200B ES EC FC-34 K FL	9000	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	6
Australia	TMA 2B850B ES EC FC-34 K FL	7200	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	6
Australia	TMA 3B1290B ES EC-34 K	1200	Air cooled chiller with oil-free centrifugal compressors and Evaporative System	1
Germany	TMH 3B1180 DC-13 SB	13300	Water cooled chiller with oil-free centrifugal compressors	8
Hong Kong	TMA 4B1250B EC-34 CM LL SPEC	13200	Air cooled Circlemiser chiller with oil-free centrifugal compressors	6

CASE STUDIES

DART MEGA DATA CENTER

Background

In 2010 Geoclima developed chiller units on behalf of Barclays for its cutting-edge Dart mega data centre.

Purposes

The project had to meet specific requirements: compact size, low noise level, reliability and maximum customisation such as glycol production at low temperatures at night for a system of accumulation of ice.

Project

The project required 12 air cooled chillers TMA 1.4 MW each, equipped with Turbocor compressors, LPA system and hybrid control system.

Results

It has been estimated that Turbomiser will save over 554 tons of CO2 compared with a free cooling solution. This has resulted in a unique project, developed from specific requirements. A really customised solution with high technology, meeting all Dart strictest standards.

COLT DATA CENTER

Background

Colt is the leading "information delivery platform" in Europe for sharing and storage essential company information.

Purposes

The purpose of the project was the replacement of the three existing 1200 kW chillers based on screw compressors. Although the system comprised three chillers, only two of them were running, with significant disadvantages concerning management costs. In addition to that the entire system was considered inefficient and very expensive.
The new system was required to provide low maintenance operations, resulting in low costs, lower energy consumption, high efficiency and great reliability. Moreover, it was necessary to ensure the cooling process within the data centre during the replacement phases.

Project

The project concerned the replacement of existing chillers with six 550 kW Turbomiser air cooled units, with Turbocor compressors, that have considerably improved robustness and flexibility of the plant. All chillers operate together and have inverter integrated compressors in order to obtain the maximum efficiency and optimise the action of the heat exchangers. As a result of the oil-free design and limited number of moving parts, the system requires no oil changes and much reduced servicing, resulting in a sensible reduction in maintenance costs.

Results

Thanks to the new Turbomiser units, it has been possible to obtain an energy saving of 54% and a reduction of £ 230,000 in annual costs.
During the "Datacentre Dynamics Award" in December 2012, the project won the "Innovation in the Medium Data Centre" award.

SBERBANK MEGA DATA CENTER

Background

OJSC "Sberbank of Russia" is the largest bank in Russia and accounts for about 27% of Russian banking assets, employing about 240,000 people.
On November 12, 2011 Sberbank opened its South Port data processing center, which claims to be the largest in Europe. It is to replace the existing regional 36 data centers. The building's overall area is around 16,500 square meters and the IT area covers 5000 square meters of it; power delivery is 25 MW.
Mega Data Center centralizes the resources of all of Sberbank's regional branches. This will ensure efficient information support to client departments and significantly boost computation efficiency. The project is a certified Tier III data center. It has a unique access control system of vein geography bio-identification.

Purposes

Moscow is in extreme temperature zone, with annual temperature range from -35 to +40 °C, which greatly complicates to get good indicators of Energy Efficiency for computing infrastructure.

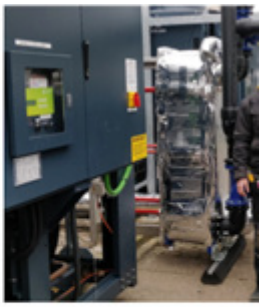
Project

Geoclima proposed a solution to provide power delivery of 25 MW with 58 split oil-free TSA units, based on Turbocor compressors technology, with remote evaporators far up to 120 mt.

Results

Sberbank mega data center won the "Innovation in the Mega Data Center" for the high level of efficiency of its data center, TIER III certified and one of the largest in Europe (5,000 square meters of IT space). December 17, 2012 in London took place the 6th Annual Awards Ceremony The Datacenter-Dynamics Awards. Mega Data Center "South Port" won first prize in the category of «Innovation in The Mega Data Center». This has been possible only using the 58 split refrigeration units TSA oil-free with remote evaporators far up to 120 mt developed by Geoclima.

OTHER PROJECTS



1. Global Connect, DK
2. Vodafone Data Center, UK
3. Nottingham University, UK

ABOUT US

We design and produce special units for applications in air conditioning, refrigeration and air handling systems, with low environmental impact and specifically designed to meet all specific clients' requirements in terms of size, capacity, performance and temperature. **Where the others stop, we go on.**

Our identity is founded on:

INNOVATION
We use the highest technology available in order to maximize efficiency, reduce start-up costs and guarantee a satisfactory return on investment.

CUSTOMIZATION
All types of machines can be provided and developed in non-standard version, thanks to the flexibility of our production system.

ECO-SUSTAINABILITY
We aim to develop applications with the lowest environmental impact possible, using refrigerants with a very low GWP, such as the HFO-1234ze and the R290.

Our facilities and sales offices around the world.

Geoclima Srl
Via dell'Industria, 12
34077 Ronchi dei Legionari (GO)
ITALY
T: +39 0481 774411
F: +39 0481 774455
E: info@geoclima.com

www.geoclima.com